

CLAIMS

What is claimed is:

1. An apparatus, comprising:

a radar based application programmable waveform generator component that
5 generates a waveform and controls a phase and an amplitude of one or more parts of the
waveform.

2. The apparatus of claim 1, wherein the radar based application
programmable waveform generator component comprises a control component;

wherein the control component employs a plurality of waveform portions to form
10 the waveform.

3. The apparatus of claim 2, wherein the radar based application
programmable waveform generator component comprises a memory component;

wherein the memory component stores one or more of the plurality of waveform
portions;

15 wherein the control component obtains one or more of the one or more of the
plurality of waveform portions from the memory component, wherein the control
component combines the one or more of the one or more of the plurality of waveform
portions to form the waveform.

4. The apparatus of claim 3, wherein the memory component comprises a first memory component, wherein the radar based application programmable waveform generator component comprises the first memory component and a second memory component;

5 wherein the second memory component stores one or more instructions, wherein the control component accesses one or more of the one or more instructions from the second memory component, wherein the control component employs the one or more instructions to make a determination of the one or more of the one or more of the plurality of waveform portions to add to the waveform from the first memory component.

10 5. The apparatus of claim 1, wherein the radar based application programmable waveform generator component comprises a signal processor component, wherein the signal processor component corrects one or more distortions in one or more of the phase and the amplitude of one or more of the one or more parts of the waveform.

15 6. The apparatus of claim 5, wherein the signal processor component corrects the one or more distortions in the one or more of the phase and the amplitude through an application of a multiplication to the one or more of the one or more parts of the waveform.

20 7. The apparatus of claim 5, wherein the one or more distortions comprise one or more non-linearities of the one or more of the one or more parts of the waveform, wherein the signal processor component corrects the one or more non-linearities through a multiplication of the one or more of the one or more parts of the waveform by a linearization factor.

8. The apparatus of claim 5, wherein the one or more distortions in the one or more of the phase and the amplitude of the one or more of the one or more parts of the waveform comprise a DC offset in the one or more of the phase and the amplitude of the one or more of the one or more parts of the waveform, wherein the radar based
5 application programmable waveform generator component creates the DC offset upon an analog to a digital conversion of the one or more of the one or more parts of the waveform;

wherein the signal processor component employs one or more correction factors to promote reduction of the DC offset for correction of the one or more of the one or
10 more parts of the waveform.

9. The apparatus of claim 5, the apparatus further comprising:

one or more filters, wherein one or more of the one or more filters cause the one or more distortions;

wherein the signal processor component detects the one or more distortions,
15 wherein the signal processor component calculates one or more correction factors based on the one or more distortions.

10. The apparatus of claim 9, wherein the signal processor component corrects the one or more distortions through an addition of the one or more correction factors to the one or more of the one or more parts of the waveform.

11. The apparatus of claim 1, the apparatus further comprising:

one or more modulators, wherein the radar based application programmable waveform generator component outputs the one or more parts of the waveform to one or more of the one or more modulators;

5 wherein the one or more of the one or more modulators transmit a signal based on one or more of the one or more parts of the waveform to an antenna.

12. The apparatus of claim 1, wherein the radar based application programmable waveform generator component employs one or more of an in-phase signal and a quadrature signal to make a determination of one or more of the phase and
10 the amplitude of the one or more parts of the waveform.

13. The apparatus of claim 1, wherein the radar based application programmable waveform generator component comprises an identification friend or foe interrogator.

14. A method, comprising the steps of:

generating one or more parts of a waveform by a radar based application
programmable waveform generator component; and

controlling one or more values of one or more of an in-phase signal and an
5 quadrature signal to generate one or more of the one or more parts of the waveform.

15. The method of claim 14, wherein the radar based application
programmable waveform generator component comprises a control component, wherein
the step of generating the one or more parts of the waveform by the radar based
application programmable waveform generator component comprises the steps of:

10 requesting a plurality of waveform portions at the control component; and
forming the waveform through employment of the plurality of waveform portions.

16. The method of claim 15, wherein the radar based application
programmable waveform generator component comprises a first memory component and
a second memory component, wherein the step of requesting the plurality of waveform
15 portions at the control component comprises the steps of:

employing one or more instructions stored at the second memory component to
obtain one or more of the plurality of waveform portions from the first memory
component;

sending one or more of the one or more of the plurality of waveform portions to
20 the control component from the first memory component; and

connecting the one or more of the one or more of the plurality of waveform
portions to form the waveform.

17. The method of claim 14, wherein the radar based application programmable waveform generator component comprises a signal processor component, wherein the step of controlling the one or more values of the one or more of the in-phase signal and the quadrature signal to generate the one or more of the one or more parts of
5 the waveform comprises the steps of:

determining one or more correction factors based on one or more distortions of the one or more of the one or more parts of the waveform; and

correcting for one or more of the one or more distortions of the one or more of the one or more parts of the waveform through employment of one or more of the one or
10 more correction factors at the signal processor component.

18. The method of claim 14, wherein the step of controlling the one or more values of the one or more of the in-phase signal and the quadrature signal to generate the one or more of the one or more parts of the waveform comprises the steps of:

making a determination of one or more of a phase and an amplitude of a radio
15 frequency signal through employment of the one or more of the in-phase signal and the quadrature signal of the one or more of the one or more parts of the waveform; and

sending the one or more of the one or more parts of the waveform to a modulator for creation of the radio frequency signal.

19. An article, comprising:

one or more computer-readable signal-bearing media;

means in the one or more media for generating one or more parts of a waveform
by a radar based application programmable waveform generator component; and

5 means in the one or more media for controlling one or more values of one or more
of an in-phase signal and an quadrature signal to generate one or more of the one or more
parts of the waveform.

20. The article of claim 19, wherein the means in the one or more media for
generating the one or more parts of the waveform by the radar based application
10 programmable waveform generator component comprise:

means in the one or more media for making a determination of one or more of a
phase and an amplitude of a radio frequency signal through employment of the one or
more of the in-phase signal and the quadrature signal of the one or more of the one or
more parts of the waveform; and

15 means in the one or more media for sending the one or more of the one or more
parts of the waveform to a modulator for creation of the radio frequency signal.

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